



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 4 Laboratory Services and Applied Science Division

980 College Station Road, Athens, Georgia 30605-2700

D.A.R.T. Id: 21-0221

Project: 21-0221, Piney Point - Phase 2 - Reported by Floyd Wellborn

April 20, 2021

MEMORANDUM

SUBJECT: FINAL Analytical Report
Project: 21-0221, Piney Point - Phase 2

FROM: Floyd Wellborn
LSB Inorganic Chemistry Section Chief

THRU: Sandra Aker, Chief
Laboratory Services Branch

TO: Floyd Wellborn

Attached are the final results for the analytical groups listed below. This report shall not be reproduced except in full without approval of the Region 4 laboratory. These analyses were performed in accordance with the Laboratory Services Branch's Laboratory Operations and Quality Assurance Manual (LSB LOQAM) found at www.epa.gov/region4/sesd/asbsop. Any unique project data quality objectives specified in writing by the data requestor have also been incorporated into the data unless otherwise noted in the Report Narrative. Chemistry data have been verified based on the LSB LOQAM specifications and have been qualified by this laboratory if the applicable quality control criteria were not met. Verification is defined in Chapter 5 of the LSB LOQAM. For a listing of specific data qualifiers and explanations, please refer to the Data Qualifier Definitions included in this report. The reported results are accurate within the limits of the method(s) and are representative only of the samples as received by the laboratory.

Analyses Included in this report:

Method Used:

Accreditations:

Classical/Nutrient Analyses (CNA)

Classical/Nutrients
Classical/Nutrients
Nitrate and/or Nitrite
Phosphorous

EPA 300.0 (Water)
EPA 300.0 (Water)
EPA 353.2 (Water)
EPA 365.1 (Water)

ISO
ISO/DW
ISO/DW
ISO



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Sample Disposal Policy

Due to limited space for long term sample storage, LSB's policy is to dispose of samples on a periodic schedule. Air samples collected in summa canisters will be disposed of 30 days following the issuance of this report. All other sample media including original samples, sample extracts and or digestates will be disposed of, in accordance with applicable regulations, 60 days from the date of this report.

This sample disposal policy does not apply to criminal samples which are held until the laboratory is notified by the criminal investigators that case development and litigation are complete.

These samples may be held in the laboratory's custody for a longer period of time. If samples require storage beyond the 60-day period, please contact the Sample Control Coordinator by e-mail at R4SampleCustody@epa.gov.

cc: Nardina Turner



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SAMPLES INCLUDED IN THIS REPORT

Project: 21-0221, Piney Point - Phase 2

Sample ID	Laboratory ID	Matrix	Date Collected	Date Received
Piney 7	E211615-01	Water	4/16/21 10:30	4/17/21 10:47
Piney 3	E211615-02	Water	4/16/21 11:25	4/17/21 10:47
Piney 6	E211615-03	Water	4/16/21 12:00	4/17/21 10:47
Piney 8	E211615-04	Water	4/16/21 12:35	4/17/21 10:47
Piney 9	E211615-05	Water	4/16/21 13:20	4/17/21 10:47
Piney 20	E211615-06	Water	4/16/21 09:55	4/17/21 10:47
Piney 19	E211615-07	Water	4/16/21 10:25	4/17/21 10:47
Piney 17	E211615-08	Water	4/16/21 10:55	4/17/21 10:47
Piney 18	E211615-09	Water	4/16/21 12:20	4/17/21 10:47



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DATA QUALIFIER DEFINITIONS

U	The analyte was not detected at or above the reporting limit.
B-2	Reporting level elevated due to trace amounts of analyte present in the method blank.
D-4	MRL elevated due to interferences.
J	The identification of the analyte is acceptable; the reported value is an estimate.
QM-1	Matrix Spike Recovery less than method control limits
QM-2	Matrix Spike Recovery greater than method control limits
QM-3	Matrix Spike Precision outside method control limits



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ACRONYMS AND ABBREVIATIONS

CAS Chemical Abstracts Service

Note: Analytes with no known CAS identifiers have been assigned codes beginning with "E", the EPA ID as assigned by the EPA Substance Registry System (www.epa.gov/srs), or beginning with "R4-", a unique identifier assigned by the EPA Region 4 laboratory.

MDL Method Detection Limit - The minimum concentration of a substance (an analyte) that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero.

MRL Minimum Reporting Limit - Analyte concentration that corresponds to the lowest demonstrated level of acceptable quantitation. The MRL is sample-specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments.

TIC Tentatively Identified Compound - An analyte identified based on a match with the instrument software's mass spectral library. A calibration standard has not been analyzed to confirm the compound's identification or the estimated concentration reported.

ACCREDITATIONS:

ISO Accredited to ISO/IEC 17025:2017 and accreditation requirements for Forensic Science Testing Laboratories.

Refer to the certificate and scope of accreditation FT-0330 at:
<http://www.epa.gov/aboutepa/about-region-4s-science-and-ecosystem-support-division-sesd>

NR Not accredited for this test.

DW Accredited for conformance with ISO/IEC 17025:2017 and testing elements in the Fifth Edition of the Manual for the Certification of Laboratories Analyzing Drinking Water, EPA 815-R-05-004, 2005.

Refer to the certificate and scope of accreditation AT-2628 at:
<http://www.epa.gov/aboutepa/about-region-4s-science-and-ecosystem-support-division-sesd>

ISO/DW Accredited to ISO/IEC 17025:2017 and accreditation requirements for Forensic Science Testing Labs, and conformance with ISO/IEC 17025:2017 and testing elements in the Manual for the Certification of Laboratories Analyzing Drinking Water.



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Classical/Nutrient Analyses

Project: 21-0221, Piney Point - Phase 2

Sample ID: Piney 7

Lab ID: E211615-01

Station ID:

Matrix: Water

Date Collected: 4/16/21 10:30

CAS Number	Analyte	Results	Qualifiers	Units	MDL MRL	Prepared	Analyzed	Method
16887-00-6	Chloride	18000		mg/L	0.32 2.5	4/17/21 11:38	4/19/21 22:58	EPA 300.0
16984-48-8	Fluoride	0.80	U, D-4	mg/L	0.80 0.80	4/17/21 11:46	4/20/21 16:02	EPA 300.0
14808-79-8	Sulfate as SO ₄	2400		mg/L	0.48 2.5	4/17/21 11:38	4/19/21 22:58	EPA 300.0
E701177	Nitrate/Nitrite as N	0.060	U, B-2	mg/L	0.017 0.060	4/17/21 11:48	4/18/21 15:51	EPA 353.2
14265-44-2	Orthophosphate as P	0.12		mg/L	0.0038 0.010	4/17/21 11:49	4/17/21 19:31	EPA 365.1



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Classical/Nutrient Analyses

Project: 21-0221, Piney Point - Phase 2

Sample ID: Piney 3

Lab ID: E211615-02

Station ID:

Matrix: Water

Date Collected: 4/16/21 11:25

CAS Number	Analyte	Results	Qualifiers	Units	MDL MRL	Prepared	Analyzed	Method
16887-00-6	Chloride	21000		mg/L	0.32 2.5	4/17/21 11:38	4/19/21 23:31	EPA 300.0
16984-48-8	Fluoride	0.80	U, D-4	mg/L	0.80 0.80	4/17/21 11:46	4/20/21 16:18	EPA 300.0
14808-79-8	Sulfate as SO ₄	2800		mg/L	0.48 2.5	4/17/21 11:38	4/19/21 23:31	EPA 300.0
E701177	Nitrate/Nitrite as N	0.060	U, B-2	mg/L	0.017 0.060	4/17/21 11:48	4/18/21 15:51	EPA 353.2
14265-44-2	Orthophosphate as P	0.28		mg/L	0.0038 0.010	4/17/21 11:49	4/17/21 19:31	EPA 365.1



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Classical/Nutrient Analyses

Project: 21-0221, Piney Point - Phase 2

Sample ID: Piney 6

Lab ID: E211615-03

Station ID:

Matrix: Water

Date Collected: 4/16/21 12:00

CAS Number	Analyte	Results	Qualifiers	Units	MDL MRL	Prepared	Analyzed	Method
16887-00-6	Chloride	19000		mg/L	0.32 2.5	4/17/21 11:38	4/20/21 0:04	EPA 300.0
16984-48-8	Fluoride	0.80	U, J, D-4, QM-1	mg/L	0.80 0.80	4/17/21 11:46	4/20/21 16:35	EPA 300.0
14808-79-8	Sulfate as SO ₄	2500		mg/L	0.48 2.5	4/17/21 11:38	4/20/21 0:04	EPA 300.0
E701177	Nitrate/Nitrite as N	0.060	U, B-2	mg/L	0.017 0.060	4/17/21 11:48	4/18/21 15:51	EPA 353.2
14265-44-2	Orthophosphate as P	0.16		mg/L	0.0038 0.010	4/17/21 11:49	4/17/21 19:31	EPA 365.1



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Classical/Nutrient Analyses

Project: 21-0221, Piney Point - Phase 2

Sample ID: Piney 8

Lab ID: E211615-04

Station ID:

Matrix: Water

Date Collected: 4/16/21 12:35

CAS Number	Analyte	Results	Qualifiers	Units	MDL MRL	Prepared	Analyzed	Method
16887-00-6	Chloride	20000		mg/L	0.32 2.5	4/17/21 11:38	4/20/21 0:37	EPA 300.0
16984-48-8	Fluoride	0.80	U, D-4	mg/L	0.80 0.80	4/17/21 11:46	4/20/21 17:25	EPA 300.0
14808-79-8	Sulfate as SO ₄	2600		mg/L	0.48 2.5	4/17/21 11:38	4/20/21 0:37	EPA 300.0
E701177	Nitrate/Nitrite as N	0.060	U, B-2	mg/L	0.017 0.060	4/17/21 11:48	4/18/21 15:51	EPA 353.2
14265-44-2	Orthophosphate as P	0.20		mg/L	0.0038 0.010	4/17/21 11:49	4/17/21 19:31	EPA 365.1



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Classical/Nutrient Analyses

Project: 21-0221, Piney Point - Phase 2

Sample ID: Piney 9

Lab ID: E211615-05

Station ID:

Matrix: Water

Date Collected: 4/16/21 13:20

CAS Number	Analyte	Results	Qualifiers	Units	MDL MRL	Prepared	Analyzed	Method
16887-00-6	Chloride	19000		mg/L	0.32 2.5	4/17/21 11:38	4/20/21 1:10	EPA 300.0
16984-48-8	Fluoride	0.80	U, D-4	mg/L	0.80 0.80	4/17/21 11:46	4/20/21 17:42	EPA 300.0
14808-79-8	Sulfate as SO ₄	2500		mg/L	0.48 2.5	4/17/21 11:38	4/20/21 1:10	EPA 300.0
E701177	Nitrate/Nitrite as N	0.060	U, B-2	mg/L	0.017 0.060	4/17/21 11:48	4/18/21 15:51	EPA 353.2
14265-44-2	Orthophosphate as P	0.18		mg/L	0.0038 0.010	4/17/21 11:49	4/17/21 19:31	EPA 365.1



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Classical/Nutrient Analyses

Project: 21-0221, Piney Point - Phase 2

Sample ID: Piney 20

Lab ID: E211615-06

Station ID:

Matrix: Water

Date Collected: 4/16/21 9:55

CAS Number	Analyte	Results	Qualifiers	Units	MDL MRL	Prepared	Analyzed	Method
16887-00-6	Chloride	17000		mg/L	0.32 2.5	4/17/21 11:38	4/20/21 1:43	EPA 300.0
16984-48-8	Fluoride	0.80	U, D-4	mg/L	0.80 0.80	4/17/21 11:46	4/20/21 17:59	EPA 300.0
14808-79-8	Sulfate as SO ₄	2300		mg/L	0.48 2.5	4/17/21 11:38	4/20/21 1:43	EPA 300.0
E701177	Nitrate/Nitrite as N	0.060	U, B-2	mg/L	0.017 0.060	4/17/21 11:48	4/18/21 15:51	EPA 353.2
14265-44-2	Orthophosphate as P	0.052		mg/L	0.0038 0.010	4/17/21 11:49	4/17/21 19:31	EPA 365.1



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Classical/Nutrient Analyses

Project: 21-0221, Piney Point - Phase 2

Sample ID: Piney 19

Lab ID: E211615-07

Station ID:

Matrix: Water

Date Collected: 4/16/21 10:25

CAS Number	Analyte	Results	Qualifiers	Units	MDL MRL	Prepared	Analyzed	Method
16887-00-6	Chloride	18000		mg/L	0.32 2.5	4/17/21 11:38	4/20/21 2:17	EPA 300.0
16984-48-8	Fluoride	0.80	U, D-4	mg/L	0.80 0.80	4/17/21 11:46	4/20/21 18:16	EPA 300.0
14808-79-8	Sulfate as SO ₄	2300		mg/L	0.48 2.5	4/17/21 11:38	4/20/21 2:17	EPA 300.0
E701177	Nitrate/Nitrite as N	0.060	U, B-2	mg/L	0.017 0.060	4/17/21 11:48	4/18/21 15:51	EPA 353.2
14265-44-2	Orthophosphate as P	0.050		mg/L	0.0038 0.010	4/17/21 11:49	4/17/21 19:31	EPA 365.1



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Classical/Nutrient Analyses

Project: 21-0221, Piney Point - Phase 2

Sample ID: Piney 17

Lab ID: E211615-08

Station ID:

Matrix: Water

Date Collected: 4/16/21 10:55

CAS Number	Analyte	Results	Qualifiers	Units	MDL MRL	Prepared	Analyzed	Method
16887-00-6	Chloride	19000		mg/L	0.32 2.5	4/17/21 11:38	4/20/21 2:50	EPA 300.0
16984-48-8	Fluoride	0.80	U, D-4	mg/L	0.80 0.80	4/17/21 11:46	4/20/21 18:32	EPA 300.0
14808-79-8	Sulfate as SO ₄	2400		mg/L	0.48 2.5	4/17/21 11:38	4/20/21 2:50	EPA 300.0
E701177	Nitrate/Nitrite as N	0.060	U, B-2	mg/L	0.017 0.060	4/17/21 11:48	4/18/21 15:51	EPA 353.2
14265-44-2	Orthophosphate as P	0.049		mg/L	0.0038 0.010	4/17/21 11:49	4/17/21 19:31	EPA 365.1



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Classical/Nutrient Analyses

Project: 21-0221, Piney Point - Phase 2

Sample ID: Piney 18

Lab ID: E211615-09

Station ID:

Matrix: Water

Date Collected: 4/16/21 12:20

CAS Number	Analyte	Results	Qualifiers	Units	MDL MRL	Prepared	Analyzed	Method
16887-00-6	Chloride	14000	J, QM-1, QM-2, QM-3	mg/L	0.32 2.5	4/17/21 11:38	4/20/21 3:23	EPA 300.0
16984-48-8	Fluoride	0.80	U, D-4	mg/L	0.80 0.80	4/17/21 11:46	4/20/21 18:49	EPA 300.0
14808-79-8	Sulfate as SO ₄	1900	J, QM-1, QM-3	mg/L	0.48 2.5	4/17/21 11:38	4/20/21 3:23	EPA 300.0
E701177	Nitrate/Nitrite as N	0.060	U, B-2	mg/L	0.017 0.060	4/17/21 11:48	4/18/21 15:51	EPA 353.2
14265-44-2	Orthophosphate as P	0.10		mg/L	0.0038 0.010	4/17/21 11:49	4/17/21 19:51	EPA 365.1



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Classical/Nutrient Analyses (CNA) - Quality Control

US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2104073 - C 300.0 Ion Chromat

Blank (2104073-BLK1)

Prepared: 04/17/21 Analyzed: 04/19/21

EPA 300.0

Chloride	U	0.10	mg/L							U
Sulfate as SO4	U	0.10	"							U

LCS (2104073-BS1)

Prepared: 04/17/21 Analyzed: 04/19/21

EPA 300.0

Chloride	249.67	0.10	mg/L	250.00		99.9	90-110			
Sulfate as SO4	247.43	0.10	"	250.00		99.0	90-110			

Matrix Spike (2104073-MS1)

Source: E211615-09

Prepared: 04/17/21 Analyzed: 04/20/21

EPA 300.0

Chloride	698.69		mg/L	200.00	579.50	59.6	90-110			QM-1
Sulfate as SO4	245.67		"	200.00	75.102	85.3	90-110			QM-1

Matrix Spike Dup (2104073-MSD1)

Source: E211615-09

Prepared: 04/17/21 Analyzed: 04/20/21

EPA 300.0

Chloride	809.90		mg/L	200.00	579.50	115	90-110	14.7	10	QM-2, QM-3
Sulfate as SO4	287.15		"	200.00	75.102	106	90-110	15.6	10	QM-3

MRL Verification (2104073-PS1)

Prepared: 04/17/21 Analyzed: 04/19/21

EPA 300.0

Chloride	52.633	0.10	mg/L	50.000		105	70-130			MRL-2
Sulfate as SO4	50.673	0.10	"	50.000		101	70-130			MRL-2

Batch 2104074 - C 300.0 Ion Chromat

Blank (2104074-BLK1)

Prepared: 04/17/21 Analyzed: 04/20/21

EPA 300.0

Fluoride	U	0.050	mg/L							U
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LCS (2104074-BS1)

Prepared: 04/17/21 Analyzed: 04/20/21

EPA 300.0

Fluoride	4.9800	0.050	mg/L	5.0000		99.6	90-110			
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Classical/Nutrient Analyses (CNA) - Quality Control
US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2104074 - C 300.0 Ion Chromat

Matrix Spike (2104074-MS1) Source: E211615-03 Prepared: 04/17/21 Analyzed: 04/20/21

EPA 300.0

Fluoride	0.69200		mg/L	1.0000	0.11000	58.2	90-110			D-4, QM-1, XM-1
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Matrix Spike Dup (2104074-MSD1) Source: E211615-03 Prepared: 04/17/21 Analyzed: 04/20/21

EPA 300.0

Fluoride	0.69300		mg/L	1.0000	0.11000	58.3	90-110	10		D-4, QM-1, XM-1
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MRL Verification (2104074-PS1) Prepared: 04/17/21 Analyzed: 04/20/21

EPA 300.0

Fluoride	0.042000	0.050	mg/L	0.050000		84.0	70-130			MRL-2
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Batch 2104075 - C 353.2 NO3-NO2

Blank (2104075-BLK1) Prepared: 04/17/21 Analyzed: 04/18/21

EPA 353.2

Nitrate/Nitrite as N	0.010500	0.050	mg/L							
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LCS (2104075-BS1) Prepared: 04/17/21 Analyzed: 04/18/21

EPA 353.2

Nitrate/Nitrite as N	0.49390	0.050	mg/L	0.50150		98.5	90-110			
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Matrix Spike (2104075-MS1) Source: E211615-09 Prepared: 04/17/21 Analyzed: 04/18/21

EPA 353.2

Nitrate/Nitrite as N	0.50990	0.050	mg/L	0.50150	0.016200	98.4	90-110			
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Matrix Spike Dup (2104075-MSD1) Source: E211615-09 Prepared: 04/17/21 Analyzed: 04/18/21

EPA 353.2

Nitrate/Nitrite as N	0.51240	0.050	mg/L	0.50150	0.016200	98.9	90-110	0.489	10	
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MRL Verification (2104075-PS1) Prepared: 04/17/21 Analyzed: 04/18/21

EPA 353.2

Nitrate/Nitrite as N	0.053800	0.050	mg/L	0.050000		108	70-130			MRL-2
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Batch 2104076 - C 365.1 Ortho Phos



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Classical/Nutrient Analyses (CNA) - Quality Control
US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2104076 - C 365.1 Ortho Phos										
Blank (2104076-BLK1)				Prepared & Analyzed: 04/17/21						
EPA 365.1										
Orthophosphate as P	U	0.010	mg/L							U
LCS (2104076-BS1)				Prepared & Analyzed: 04/17/21						
EPA 365.1										
Orthophosphate as P	0.50700	0.010	mg/L	0.50050		101	90-110			
Matrix Spike (2104076-MS1)				Source: E211615-02		Prepared & Analyzed: 04/17/21				
EPA 365.1										
Orthophosphate as P	0.77500	0.010	mg/L	0.50050	0.28100	98.7	90-110			
Matrix Spike Dup (2104076-MSD1)				Source: E211615-02		Prepared & Analyzed: 04/17/21				
EPA 365.1										
Orthophosphate as P	0.78300	0.010	mg/L	0.50050	0.28100	100	90-110	1.03	10	
MRL Verification (2104076-PS1)				Prepared & Analyzed: 04/17/21						
EPA 365.1										
Orthophosphate as P	0.010000	0.010	mg/L	0.010000		100	70-130			MRL-2
Batch ED12004 - 2104073										
Instrument Blank (ED12004-IBL1)				Prepared & Analyzed: 04/19/21						
EPA 300.0										
Chloride	U	0.10	mg/L							U
Sulfate as SO4	U	0.10	"							U
Instrument Blank (ED12004-IBL2)				Prepared & Analyzed: 04/19/21						
EPA 300.0										
Chloride	U	0.10	mg/L							U
Sulfate as SO4	1.6070	0.10	"							
Instrument Blank (ED12004-IBL3)				Prepared: 04/19/21 Analyzed: 04/20/21						
EPA 300.0										
Chloride	U	0.10	mg/L							U
Sulfate as SO4	U	0.10	"							U



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Region 4 Laboratory Services and Applied Science Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 21-0221
Project: 21-0221, Piney Point - Phase 2 - Reported by Floyd Wellborn

Classical/Nutrient Analyses (CNA) - Quality Control

US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch ED12005 - 2104074

Instrument Blank (ED12005-IBL1)

Prepared: 04/17/21 Analyzed: 04/20/21

EPA 300.0

Fluoride	U	0.050	mg/L							U
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Instrument Blank (ED12005-IBL2)

Prepared: 04/17/21 Analyzed: 04/20/21

EPA 300.0

Fluoride	U	0.050	mg/L							U
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Instrument Blank (ED12005-IBL3)

Prepared: 04/17/21 Analyzed: 04/20/21

EPA 300.0

Fluoride	U	0.050	mg/L							U
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Notes and Definitions for QC Samples

U	The analyte was not detected at or above the reporting limit.
D-4	MRL elevated due to interferences.
MRL-2	MRL verification for Non-Potable Water matrix
QM-1	Matrix Spike Recovery less than method control limits
QM-2	Matrix Spike Recovery greater than method control limits
QM-3	Matrix Spike Precision outside method control limits
XM-1	Sample background/spike ratio higher than method evaluation criteria